Please add the following new claims:

20. (New) A transformed plant, comprising an expression vector, wherein said expression vector comprises a gene encoding a *Trichoplusia ni* invertebrate intestinal mucin (IIM) protein operably linked to an expression control sequence, such that said transformed plant is capable of expressing said IIM protein.

21. (New) A method of producing a *Trichoplusia ni* IIM protein or peptide comprising:

a) transforming a host cell with an expression vector comprising a promoter operatively linked to a nucleotide sequence which codes for a predetermined protein or peptide of a *Trichoplusia ni* IIM protein;

b) culturing said host cell under conditions such that said IIM protein is expressed in recoverable quantity;

c) lysing said host cell; and

d) recovering said IIM protein.

22. (New) The method of claim 21 wherein said expression vector further comprises a gene encoding a transfer molecule such as glutathione-S-transferase.

REMARKS

The office action February 8, 2000 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1, 3, 5-7, 9-10, and 20-22 remain in this case, claim 9 being amended, claims 2, 8, and 11-19 being cancelled and claims 20-22 being added by this response. Claims 2, 8, and 11-19 were withdrawn from consideration by the Examiner. Applicant reserves the right to pursue claims 2, 8, and 11-19 in one or more divisional applications.

Claims 1, 6, and 9 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled

in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1, as amended, functionally describes the IIM protein. Claim 6 describes a method of producing an IIM protein. Sequencing the DNA is not necessary for transformation. Methods of isolating proteins are well known in the art. Someone skilled in the art could easily go forward and use the techniques described in the specification of the current application to pull out another IIM protein. Briefly, a cDNA library is constructed from the invertebrate of interest. This well known technique is delineated in the specification. Then, the cDNA expression library is screened for IIM cDNA clones using an IIM-specific polyclonal antibody. There is no need for undue experimentation to obtain other IIM proteins covered by these claims. Therefore, reconsideration and withdrawal of the rejection of claims 1 and 6 is respectfully requested.

Dependent claim 9, being dependent upon and further limiting independent claim 6, should also be allowable for that reason, as well as for the additional recitations it contains. Applicants respectfully request reconsideration of the rejection of claim 9 under 35 U.S.C. § 112, first paragraph, in view of the above amendments and remarks.

Claims 1, 6 and 9 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1, as amended, functionally describes the IIM protein. Claim 6 describes a method of producing an IIM protein. Sequencing the DNA is not necessary for transformation. The specification discloses that antiserum directed to IIM protein from *T. ni* cross-reacted with midgut proteins from 18 other species of invertebrates (see Table 3, pages 31 and 32). It is shown that IIM protein exists in other species. The hybridization data provides sufficient guidances for the class of IIM proteins described in the claims. Exact sequence data is not necessary because the claims are functional. Both the function of IIM proteins and what they do in organisms is well described in the specification. The specification shows that the Applicant had possession of the claimed invention at the time of filing. Reconsideration and withdrawal of the rejection of claims 1 and 6 is respectfully requested.

Dependent claim 9, being dependent upon and further limiting independent claim 6, should also be allowable for that reason, as well as for the additional recitations it contains. Applicants respectfully request reconsideration of the rejection of claim 9 under 35 U.S.C. § 112, first paragraph, in view of the above amendments and remarks.

The Examiner stated that Claim 9 was deemed indefinite in its confusing recitation of the phrase "expression vector further comprises a transfer molecule". Per the Examiner's suggestion, claim 9 has been amended to overcome this rejection. Reconsideration and withdrawal of the rejection of claim 9, as amended, is respectfully requested.

In light of the Examiner's suggestions, claims 20-22 have been added to the case. These claims are based upon the proposed Examiner's Amendment.

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

> "Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

Respectfully Submitted:
Robert Granados

By: _____
Christopher A. Michaels, Reg. No. 34, 390
Attorney for Applicant

BROWN, PINNISI & MICHAELS, P.C.
400 M&T Bank Building - 118 N. Tioga St.
Ithaca, NY 14850
(607) 256-2000 • (607) 273-2609 (fax)
e-mail: bpm@bpmlegal.com
Dated: 5/8/2002

APPENDIX OF CLAIMS

The following are the claims in this case, as amended to date:

1. A transformed plant, comprising an expression vector, wherein said expression vector comprises a gene encoding an invertebrate intestinal mucin (IIM) protein operably linked to an expression control sequence, such that said transformed plant is capable of expressing said IIM protein.

3. A recombinant DNA sequence comprising a DNA sequence that codes for an IIM protein, wherein a nucleic acid sequence of said recombinant DNA sequence is selected from the group consisting of

a) a cDNA sequence as shown in SEQ. ID. No. 1; and

b) a cDNA sequence as shown in SEQ. ID. No. 2.

5. The recombinant DNA sequence of claim 3, wherein said IIM protein has an amino acid sequence selected from the group consisting of:

a) an amino acid sequence as shown in SEQ. ID. No. 3; and

b) an amino acid sequence as shown in SEQ. ID. No. 4.

6. A method of producing a IIM protein or peptide comprising:

a) transforming a host cell with an expression vector comprising a promoter operatively linked to a nucleotide sequence which codes for a predetermined protein or peptide of a IIM protein;

b) culturing said host cell under conditions such that said IIM protein is expressed in recoverable quantity;

c) lysing said host cell; and

d) recovering said IIM protein.

7. A gene expression vector containing a recombinant DNA sequence encoding a *Trichoplusia ni* IIM protein sequence.

9. The method of claim 6 wherein said expression vector further comprises a gene encoding a transfer molecule such as glutathione-S-transferase.

10. The expression vector of claim 7, wherein said expression vector is a recombinant plasmid adapted for insertion into and transformation of a plant.

20. A transformed plant, comprising an expression vector, wherein said expression vector comprises a gene encoding a *Trichoplusia ni* invertebrate intestinal mucin (IIM) protein operably linked to an expression control sequence, such that said transformed plant is capable of expressing said IIM protein.

21. A method of producing a *Trichoplusia ni* IIM protein or peptide comprising:

a) transforming a host cell with an expression vector comprising a promoter operatively linked to a nucleotide sequence which codes for a predetermined protein or peptide of a *Trichoplusia ni* IIM protein;

b) culturing said host cell under conditions such that said IIM protein is expressed in recoverable quantity;

c) lysing said host cell; and

d) recovering said IIM protein.

22. The method of claim 21 wherein said expression vector further comprises a gene encoding a transfer molecule such as glutathione-S-transferase.